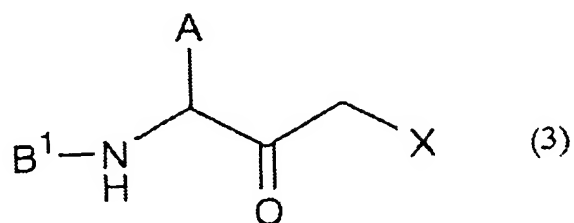
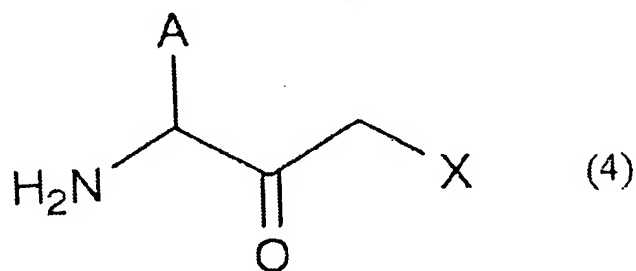


What is claimed is:

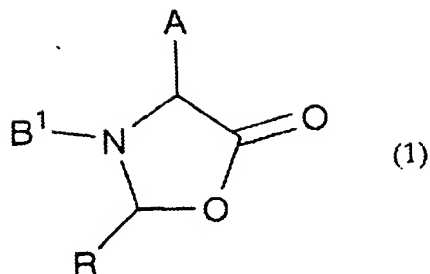
1. A process for producing N-protected  $\alpha$ -aminohalomethyl ketones of following general formula (3):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B¹ represents a protecting group for the amino group; and X represents a halogen atom,  $\alpha$ -aminohalomethyl ketones of following general formula (4):



wherein A and X are as defined above,  
or salts thereof, which comprises the steps of reacting a 3-oxazolidin-5-one derivative of following general formula (1):

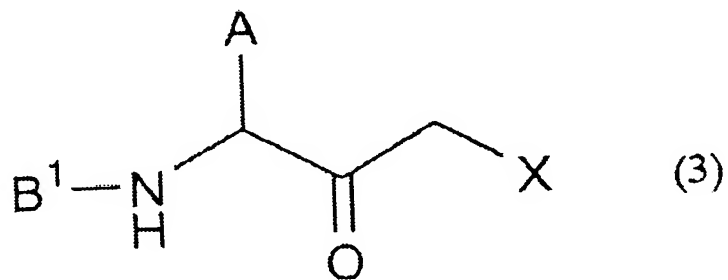


wherein R represents an unsubstituted or substituted aryl group or lower alkyl group or hydrogen atom, and A and B¹ are as defined above with a halomethyl lithium and then treating the reaction product with an acid.

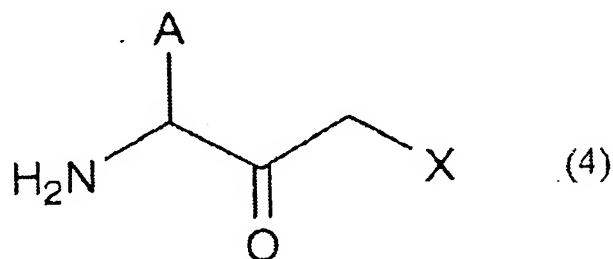
2. The process according to claim 1, wherein A is a benzyl group or phenylthiomethyl group.

3. The process according to claim 1, wherein B¹ is a carbamate-type protecting group, and the halomethyl lithium is one produced from a lower alkyl lithium and bromochloromethane or chloriodomethane.

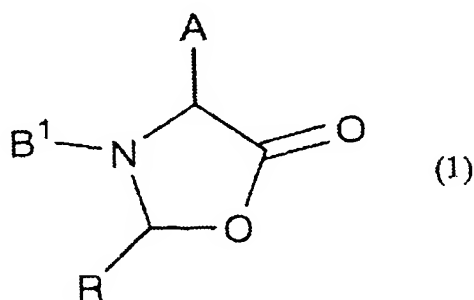
4. A process for producing N-protected  $\alpha$ -aminohalomethyl ketones of following general formula (3):



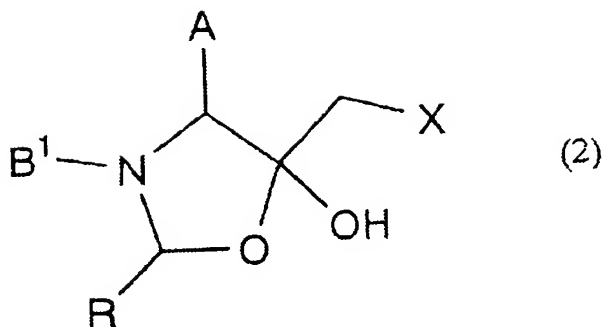
wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>1</sup> represents a protecting group for the amino group; and X represents a halogen atom, or  $\alpha$ -aminohalomethyl ketones of following general formula (4):



wherein A and X are as defined above,  
or salts thereof, which comprises the steps of reacting a 3-oxazolidin-5-one derivative of following general formula (1):



wherein R represents an unsubstituted or substituted aryl group or lower alkyl group or hydrogen atom, and A and B<sup>1</sup> are as defined above  
with a halomethyl lithium to form a 5-halomethyl-5-hydroxy-3-oxazolidine derivative of following general formula (2):



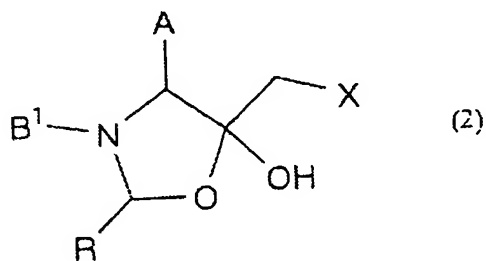
wherein X, R, A and B¹ are as defined above

and then treating the reaction product with an acid.

5. The process according to claim 4, wherein A is a benzyl group or phenylthiomethyl group.

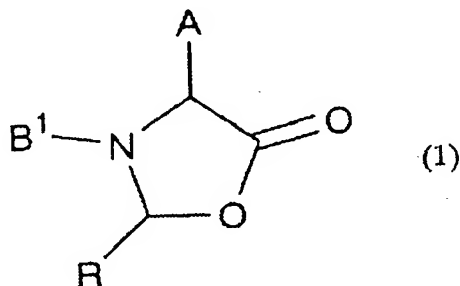
6. The process according to claim 4, wherein B¹ is a carbamate-type protecting group, and the halomethyl lithium is one produced from a lower alkyl lithium and bromochloromethane or chloriodomethane.

7. A process for producing 5-halomethyl-5-hydroxy-3-oxazolidine derivatives of following general formula (2):



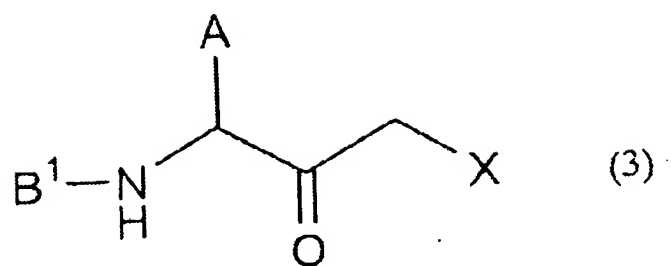
wherein R represents an unsubstituted or substituted aryl group or lower alkyl group or hydrogen atom, A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6

to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>1</sup> represents a protecting group for the amino group, and X represents a halogen atom, which comprises the step of reacting a 3-oxazolidin-5-one derivative of following general formula (1):

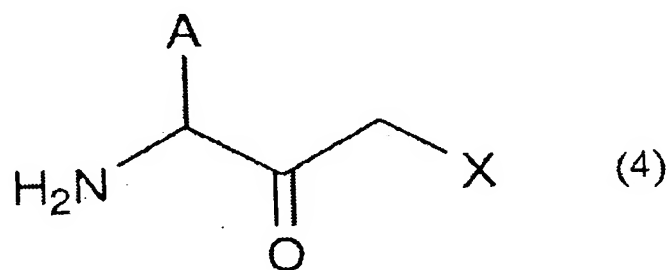


wherein R, A and B<sup>1</sup> are as defined above with a halomethylithium.

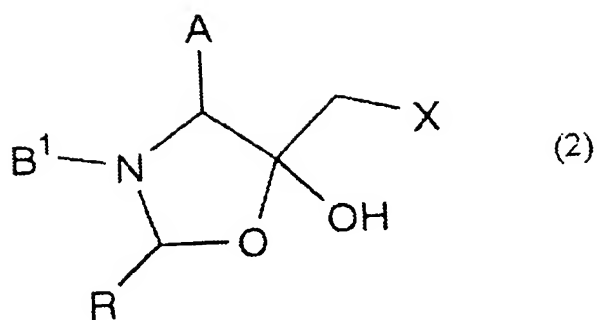
8. The process according to claim 7, wherein A is a benzyl group or phenylthiomethyl group.
9. The process according to claim 7, wherein B<sup>1</sup> is a carbamate-type protecting group, and the halomethylithium is one produced from a lower alkylolithium and bromochloromethane or chloriodomethane.
10. A process for producing N-protected  $\alpha$ -aminohalomethyl ketones of following general formula (3):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>1</sup> represents a protecting group for the amino group; and X represents a halogen atom or  $\alpha$ -aminohalomethyl ketones of following general formula (4):



wherein A and X are as defined above,  
or salts thereof, which comprises the step of treating a 5-halomethyl-5-hydroxy-3-oxazolidine derivative of following general formula (2):

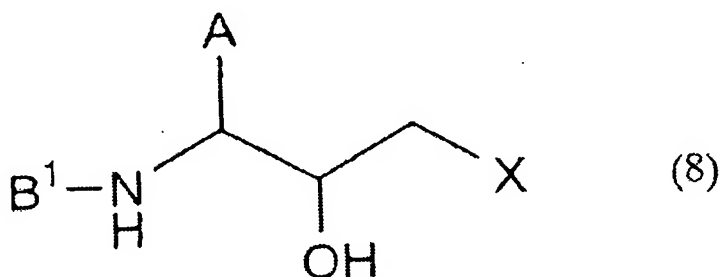


wherein R represents an unsubstituted or substituted aryl group or lower alkyl group or hydrogen atom, and A, B¹ and X are as defined above with an acid.

11. The process according to claim 10, wherein A is a benzyl group or phenylthiomethyl group.

12. The process according to claim 10, wherein B¹ is a carbamate-type protecting group.

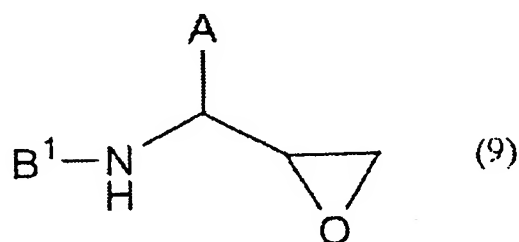
13. A process for producing N-protected  $\beta$ -aminoalcohols of following general formula (8):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B¹ represents a protecting group for the amino group; and X represents a halogen atom,

which comprises the steps of producing an N-protected  $\alpha$ -aminohalomethyl ketone of general formula (3) by the process of claim 1, and then reducing this ketone.

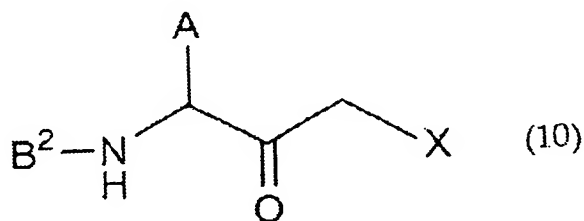
14. A process for producing N-protected  $\beta$ -aminoepoxides of following general formula (9):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; and B<sup>1</sup> represents a protecting group for the amino group,

which comprises the steps of producing an N-protected  $\beta$ -amino alcohol of general formula (8) by the process of claim 13, and then treating this alcohol with a base.

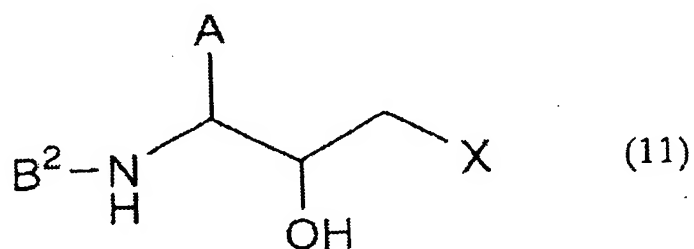
15. A process for producing N-protected  $\alpha$ -aminohalomethyl ketones of following general formula (10):



wherein A represents an unsubstituted or substituted alkyl group having

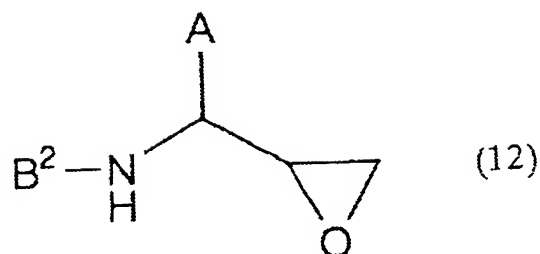
1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>2</sup> represents a protecting group for the amino group; and X represents a halogen atom, which comprises the steps of producing an  $\alpha$ -aminohalomethyl ketone of general formula (4) by the process of claim 1, and then protecting the amino group thereof.

16. A process for producing N-protected  $\beta$ -aminoalcohols of following general formula (11):



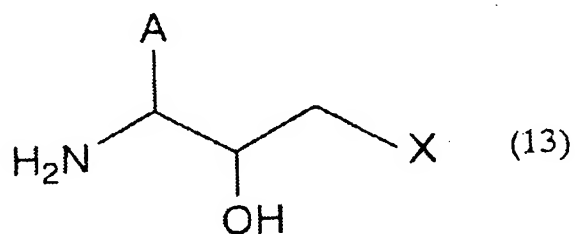
wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>2</sup> represents a protecting group for the amino group; and X represents a halogen atom, which comprises the steps of producing an N-protected  $\alpha$ -aminohalomethyl ketone of general formula (10) by the process of claim 15, and then reducing this ketone.

17. A process for producing N-protected  $\beta$ -aminoepoxides of following general formula (12):



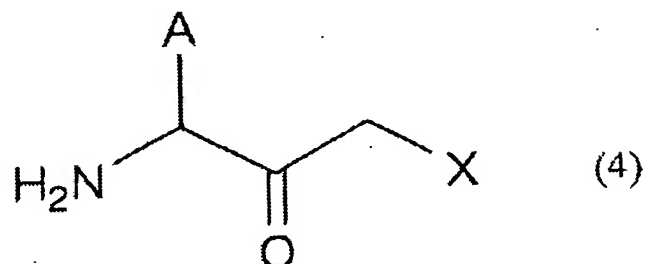
wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>2</sup> represents a protecting group for the amino group; and X represents a halogen atom, by which comprises the steps of producing an N-protected  $\beta$ -amino alcohol of general formula (11) by the process of claim 16, and then treating this alcohol with a base.

18. A process for producing  $\beta$ -aminoalcohols of following general formula (13):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; and X represents a halogen atom,

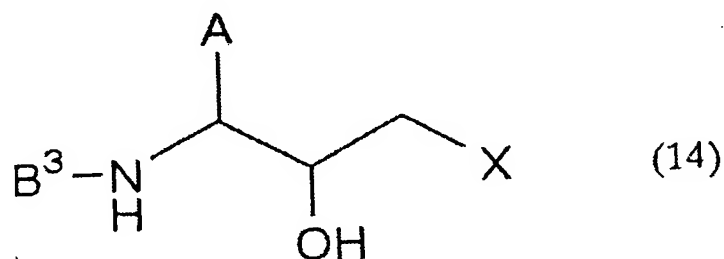
or salts thereof, by which comprises the steps of producing an  $\alpha$ -aminohalomethyl ketone of general formula (4):



wherein A and X are as defined above

or a salt thereof by the process of claim 1, and then reducing this ketone.

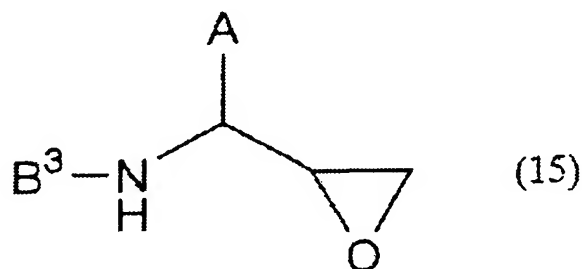
19. A process for producing N-protected  $\beta$ -aminoalcohols of following general formula (14):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>3</sup> represents a protecting group for the amino group; and X represents a halogen atom, which comprises the steps of producing a  $\beta$ -aminoalcohol of general formula (13) or a salt thereof by the process of claim 18, and then

protecting the amino group thereof with a protecting group.

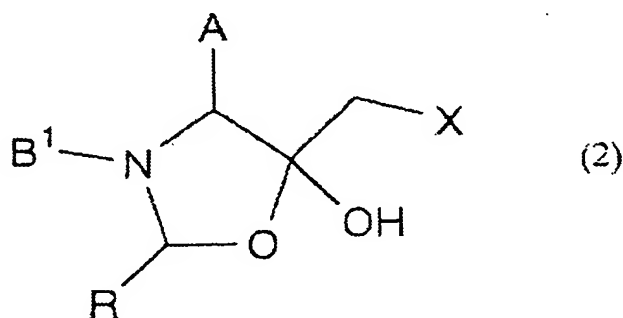
20. A process for producing N-protected  $\beta$ -aminoepoxides of following general formula (15):



wherein A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; and B<sup>3</sup> represents a protecting group for the amino group,

by which comprises the steps of producing an N-protected  $\beta$ -amino alcohol of general formula (14) by the process of claim 19, and then treating this alcohol with a base.

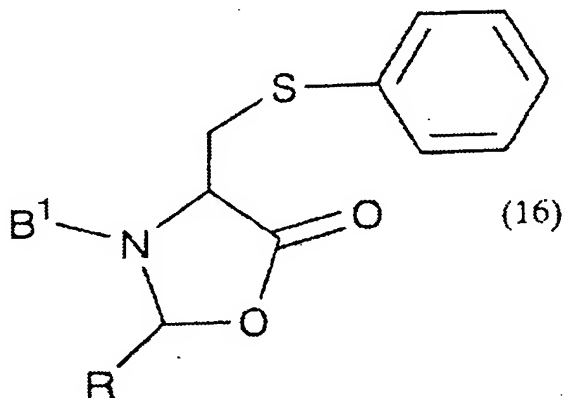
21. 5-Halomethyl-5-hydroxy-3-oxazolidine derivatives of following general formula (2):



wherein R represents an unsubstituted or substituted aryl group or lower

alkyl group or hydrogen atom, A represents an unsubstituted or substituted alkyl group having 1 to 10 carbon atoms, aryl group having 6 to 15 carbon atoms or aralkyl group having 7 to 20 carbon atoms, or a group corresponding thereto which contains a hetero atom in the carbon skeleton; B<sup>1</sup> represents a protecting group for the amino group; and X represents a halogen atom.

22. 3-Oxazolidin-5-one derivatives of following general formula (16)



wherein R represents an unsubstituted or substituted aryl group or lower alkyl group or hydrogen atom, and B<sup>1</sup> represents a protecting group for the amino group.